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ABSTRACT

This report discusses trends in the causes of child deaths in New Jersey in recent years and closely examines child deaths in the state in 1974. Demographic data on child deaths are reported with an emphasis on types of deaths in which neglect or nonaccidental injury are likely to have been a factor. Death certificate data were obtained from the New Jersey Department of Health for all children who died at age 8 days to 17 years in 1974. The names of these children were compared to a computer listing of all children under Division of Youth and Family Services supervision from 1967 to 1976, and it was found that 68 children were under DYFS prior to their deaths. Additional information on the circumstances surrounding the deaths of selected children was derived from Division of Youth and Family Services case records and from the New Jersey State Medical Examiner's reports. This information was used to detect patterns of child death due to infant mortality, home accidents, neglect, abuse, homicide, suicide, and motor vehicle accidents and to identify areas for further investigation and possible social intervention. (JMB)

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Child Deaths in New Jersey: Social Characteristics

Charles J. Crowley

I. Introduction

Death is the extreme case of conditions which may involve several more children for each one who dies. Ten children may be seriously injured for each child who dies of child abuse or neglect. Many more children may be disabled or limited by birth defects in excess of those who succumb to these conditions. Suicides represent a small proportion of attempts. Fatal assaults, home accidents, and motor vehicle accidents are tragic indicators of social phenomena which include many children who survive traumatic incidents. We cannot estimate the total cost of inadequate protection for New Jersey's children, but an examination of child deaths can suggest strategies for preventing deaths and lessening harm.

The present report discusses trends in the causes of child deaths in recent years in New Jersey, and examines child deaths in 1974 in greater detail. An analysis of death certificate data from the New Jersey Department of Health for all children aged 8 days to 17 years who died in 1974 reveals that there were 1,457 deaths in this population in that year. A computer listing of all children under Division of Youth and Family Services

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supervision from 1967 to 1976 was produced and compared with the death certificate file. Sixty-eight (68) children appeared in both files. These are the children who were under DYFS supervision prior to their deaths. Additional information was derived from DYFS case records and from the New Jersey State Medical Examiner's reports on selected children. These recorded sources of information allow the detection of some patterns in child deaths and identify areas for further investigation and possible social intervention.

In the sections that follow, we shall first look at recent statistics on child deaths in New Jersey; this section will set the dimensions of the problem. The second section will be a discussion of the deaths in 1974 based on the death certificate data and medical examiner's reports. Throughout the report we shall emphasize types of death in which neglect or nonaccidental injury may be expected to be a factor. The third section is about the children who were under DYFS supervision who died in 1974. Finally, we shall attempt to summarize the findings of this report and to develop a set of recommendations.

This report was prepared by Charles Crowley of the DYFS Bureau of Research, Planning and Program Development (BRPPD). It was completed in May, 1977 and revised on the basis of suggestions from DYFS supervisors.

II. An Overview of Child Deaths

In an excellent review of childhood mortality and morbidity, Newberger et al. (1976) report these national statistics:

> In the population of children age one to four years, the principal causes of death and their frequency per 100,000 estimated population in 1973 (death rate) are accidents (19.6), motor vehicle accidents (12.3), congenital anomalies (9.6), malignant neoplasms (6.4), influenza and pneumonia (5.9), homicide (2.5), diseases of the heart (2.1), meningitis (1.6), enteritis and other diarrheal diseases (1.0), cerebrovascular diseases (1.0), and anemias (0.6).
>
> ... For children five to fourteen years of age the principal causes of death and the death rates in 1973 are motor vehicle accidents (10.6), all other accidents (10.2), malignant neoplasms (5.4), congential anomalies (2.2), influenza and pneumonia (1.4), homicide (1.1), diseases of the heart (1.0), cerebrovascular diseases (0.6), suicide (0.4), benign neoplasms and neoplasms of unspecified nature (0.4), and anemias (0.3).

For infants, congenital problems, birth complications, and disease are the major killers.

Table 1 shows the total number of deaths in four (4) age groups for New Jersey in the years 1972 to 1975. In New Jersey, 44 percent of all deaths in 1975 were recorded as accidents for children 1 to 14 years. Table 1 shows that there were 94 such deaths in the 1 to 4 year old group and 182 deaths in the 5 to 14 year old group. The proportion of deaths which are accidents increases to about one-half in the 15 to 24 year old group. Accidents account for only 2 percent of infant

TABLE 1: New Jersey Resident Deaths Caused by Accidents, Homicides, and Suicides for Persons Aged 0 to 24, 1972-75

	Total*		Other[1]		Accidents[2]		Homicides[3]		Suicides[4]		Undetermined[5]	
(Under one year)												
1975	1,403	(100.0)	1,367	(97.4)	25	(1.8)	5	(0.4)	0	(0.0)	6	(0.4)
1974	1,513	(100.0)	1,472	(97.3)	30	(2.0)	5	(0.3)	0	(0.0)	6	(0.4)
1973	1,618	(100.0)	1,571	(97.1)	43	(2.7)	1	(0.1)	0	(0.0)	3	(0.2)
1972	1,809	(100.0)	1,770	(97.8)	31	(1.7)	5	(0.3)	0	(0.0)	3	(0.2)
(1-4 years)												
1975	241	(100.0)	127	(52.7)	94	(39.0)	14	(5.8)	0	(0.0)	6	(2.5)
1974	291	(100.0)	168	(57.7)	107	(36.8)	12	(4.1)	0	(0.0)	4	(2.4)
1973	314	(100.0)	181	(57.6)	113	(36.6)	12	(3.8)	0	(0.0)	6	(1.9)
1972	340	(100.0)	204	(60.0)	119	(35.0)	11	(3.2)	0	(0.0)	6	(1.8)
(5-14 years)												
1975	382	(100.0)	181	(47.4)	182	(47.6)	16	(4.2)	1	(0.3)	2	(0.5)
1974	376	(100.0)	186	(49.5)	170	(45.2)	10	(2.7)	7	(1.9)	3	(0.8)
1973	455	(100.0)	215	(47.3)	215	(47.3)	15	(3.3)	7	(1.5)	3	(0.7)
1972	483	(100.0)	227	(47.0)	230	(47.6)	17	(3.5)	5	(1.0)	4	(0.8)
(15-24 years)												
1975	1,256	(100.0)	345	(27.5)	628	(50.0)	139	(11.1)	112	(8.9)	32	(2.5)
1974	1,239	(100.0)	373	(30.1)	616	(49.7)	127	(10.3)	86	(6.9)	37	(3.0)
1973	1,296	(100.0)	361	(27.9)	676	(52.2)	147	(11.3)	81	(6.3)	31	(2.4)
1972	1,189	(100.0)	383	(32.2)	571	(48.0)	115	(9.7)	98	(8.2)	22	(1.9)

*Percentages are in parentheses.

1. Cause of death is 000-799.
2. Cause of death is E800-E949.
3. Cause of death is E960-E978.
4. Cause of death is E950-E959.
5. Cause of death is E980-E989.

Source: New Jersey State Department of Health, New Jersey Health Statistics (1974, 1973, 1972) and pre-publication tabulations for 1975.

deaths in 1975. The proportions of deaths due to accidents has remained stable in the 1972 to 1975 period. In 1974, the accidental death rate was 21.8 (per 100,000 population) for 1 to 4 year olds, 11.7 for 5 to 14 year olds and 53.1 for 15 to 24 year olds. If a substantial number of unreported child abuse deaths occur, they are most likely to be recorded as accidents in the official statistics since "other" causes do not involve trauma. (Child neglect could contribute to deaths in the "other" category.) A category of accidents, those which occur at home, have been isolated for additional analysis below.

The pattern of child deaths in New Jersey does not differ significantly from the national statistics. Homicides account for a small proportion of child deaths. Homicides account for about 5 percent of all deaths in the 1-14 year old group in 1975. In the previous three years, homicides were 3.5 percent of all deaths. Less than 1 percent of infant deaths are listed as homicides. The 15-24 year old group has a much higher homicide rate than the younger children (10.9 per 100,000 population versus less than 1). Males and especially nonwhite males are overrepresented as homicide victims. Nonwhites represent 40 percent of the homicides in the 1-14 year age group and more than 50 percent in the 15-24 year old group. A nonwhite

male aged 15 to 24 was more likely to be murdered in 1974 than to die in an automobile accident, the cause of death for more than a third of all deaths for white males in this age group. Homicides have not decreased (see Table 1) since 1972; indeed, they have shown a slight increase, while deaths from all causes have decreased. The homicide rate in New Jersey has more than doubled since 1960 for the total population.

In a recent study of child murders in New York City, Kaplun and Reich (1976) found that "two-thirds of the assailants--were parents or paramours."

> The older the victim, the less frequently was his murderer a parent. While babies were killed by parents 83% of the time, the figure for preschoolers was 53%, that for school children under 10 was 30%, and that for those over 10 was 17%. Paramours rarely murdered their own children; instead they killed the sons of their predecessors. Except in the cases in which children were under 2 years of age, assailants and victims tended to be of the same sex. This was true in 31 (73.6%) of the 42 public welfare and other cases in which there was information on both the age and sex of the victim and the sex of his reported assailant. (p. 810)
>
> In 81% of the public welfare cases in which information was provided on the assailants, the assailants showed prehomicidal deviant behavior, mostly alcoholism, narcotics use, and criminal involvement. Diagnosed psychoses were rare, and suicide attempts were even rarer. Posthomicidal suicide attempts occurred in only 4% of the cases. (p. 810)
>
> After a child has been murdered there are generally surviving siblings or subsequently born children. In 79% of the cases--in which children remained in parental custody following the homicide, there was evidence of possible jeopardy, and in 32% continued neglect or abuse was a matter of record. (p. 811)

Infant Deaths

In 1974, the infant death rate for the state was 16.1 (the number of deaths under one year of age per 1,000 live births) and was 15.0 in 1975.* The infant death rates in New Jersey's large cities are very high. Trenton had an infant death rate of 30.8 in 1974, 26.8 in Camden, 28.7 in Jersey City, and 20.6 in Newark; Bergen County had a rate of only 12.3. A reduction of the State's infant death rate to that experienced by Bergen County would mean a reduction in the number of infant deaths from 1,513 (in 1974 figures) to about 1,155. Very young mothers and women over 35 are high risk pregnancies. There were 313 births to mothers who were under 15 years of age in 1974 in New Jersey. (New Jersey State Department of Health, 1976)

It is clear that many infant deaths can be prevented but solutions are required that recognize need for social services to insure the health of pregnant women, new mothers and their babies. Social intervention has successfully reduced infant mortality in several cities. Bronfenbrenner reports that:

> "Several different studies have related infant mortality to inadequate prenatal care. What happens if the care is delivered to poor people? The answer to that question is available in data

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*U.S. DHEW, "Final Mortality Statistics, 1975," Monthly Vital Statistics Report, Vol. 25 (February 11, 1977) 11:6.

> from the maternal and infant-care project the Department of Health, Education and Welfare financed in the mid-1960's in slum sections of 14 cities. In the target areas of such programs there was a dramatic drop in infant mortality; from 34.2 per 1,000 live births in 1964 to 21.5 in 1969 in Denver, from 33.4 to 13.4 in Omaha, from 25.4 in 1965 to 14.3 in 1969 in Birmingham. Among the populations served by these programs there were also significant reductions in premature births, in repeated teenage pregnancy, in conceptions by women over 35 and in the number of families with more than four children." (Bronfenbrenner, 1974:54)

Newberger, et al. (1976:267) concludes "(1) that being poor and/or nonwhite in our society carries with it greater risk of fetal and infant mortality and poor birth outcomes; (2) that birth outcome is in large part related to controllable causes; and (3) that the effects of poor birth outcome are intensified by growing up poor." The areas of New Jersey where the poor are concentrated need pre and postnatal care programs to lower the high infant death rates cited above.

In the next section, we shall examine data on child deaths in 1974 in New Jersey to bring some of the problems into clearer focus.

III. Child Deaths in 1974

Sources of Data and Methodology

In the New Jersey population of children under 18 years of age in 1974, there were 2,466 deaths. We selected

those child deaths in the age range eight (8) days to 17 years for analysis beyond the information published in official statistics. From this total was excluded 1,009 deaths due principally to conditions existing at birth as it was thought that little new information could be obtained from these death records. The New Jersey Department of Health was contacted and the DYFS was given a set of computer cards with death certificate information on 1,457 children in the selected age group. The DYFS prepared a listing of "Child Master Record" data on all cases under supervision from 1967 to 1976. This listing includes data on about 150,000 cases. Additional information was obtained from DYFS case records and New Jersey Medical Examiner's reports on a small sample of deaths; these are used primarily as case material. The research consisted of statistical analysis and/or search for potentially useful information in the assembled data. The identification of patterns and anomalies rather than specific hypothesis testing was the goal of this study. It sought to find out the needs to be done by the people of New Jersey and the responsible agencies to reduce the number of child deaths.

Leading Causes of Death in 1974

Fortunately, death is a rare event for children in New Jersey. The death rate for children 1 to 4 years old

was 59.3 (per 100,000 population) and 25.9 for children 5 to 14 years. Accidents, congenital anomalies, influenza and pneumonia, and malignant neoplasms are the leading causes of death in the 5 to 14 years group. The pattern is quite similar to that quoted on page two (2) for the nation. There were a total of 953 deaths in 1974 in New Jersey in the population of children 1 to 17 years. Trauma (including accident, homicide, suicide, and undetermined trauma) accounted for 36.6 percent of the 1,457 deaths for which we had death certificate data, i.e., 8 days to 17 years at death. This indicates that while the elimination of diseases such as cholera through public sanitation and medical advances has saved many lives in the past, future reductions in child deaths may depend more on the level of caring experienced by the child both before and after birth than on the control or elimination of disease.

Demographic Characteristics of Child Deaths

The death certificate records contain a limited amount of demographic information on age, sex and race.

There is little remarkable about the age distribution of the child deaths studied. One-third of the deaths were to infants (8 days to 1 year). The mortality rate is higher at the end of the age range than for the

middle years (5 to 14). Children under 6 years of age account for most of the home accident deaths; they are 58 percent of the child deaths and 72 percent of the home accident deaths. Nonwhites are overrepresented for all child deaths and especially so for deaths under 6 years of age. For children older than age 6, the location for accidental deaths is more likely to be outside the home; the proportion of children who die in motor vehicle accidents increases substantially at age 16. Child abuse or neglect was most likely involved in deaths in the under 14 age group. Ten of 17 deaths, for which it could not be determined whether the cause was accident or homicide were children under 5 years of age. In these deaths, the injury usually is consistent with a finding of homicide, but the final determination depends upon further police investigation of the circumstances. Forty-five percent of the homicides are youths 15, 16, or 17, but these deaths are more likely to involve some type of "street" crime rather than assaults by a parent.

There were 427 nonwhite deaths in the population studied, or a little more than 29 percent of the deaths. This proportion represents nearly twice as many deaths as one would expect from the proportion of nonwhites in the New Jersey population. Twenty-two of the 29 homicides are for nonwhites, about 45 percent of the

TABLE 2: Characteristics of Child Deaths from Selected Classes of Deaths: New Jersey Children Aged 8 Days to 17 Years in 1974 (Percentages)

	Total	DYFS Supervised	Home Accidents	Homicide	Undetermined Trauma	Sudden Unknown	Suicide
Age							
Infant	34.6	22.1	15.5	8.4	25.3	88.3	0.0
1-5 years	23.5	36.8	56.4	25.1	23.6	7.6	0.0
6-14 years	24.1	26.5	20.3	23.1	17.7	1.4	41.0
15-17 years	17.8	14.7	7.7	43.8	23.5	2.8	58.7
Sex							
Male	58.9	64.7	62.7	66.7	41.2	58.6	76.5
Female	41.1	35.3	37.3	33.3	58.8	41.4	23.5
Race							
White	70.7	55.9	66.2	56.3	88.2	52.4	94.1
Nonwhite	29.3	44.1	33.8	43.8	11.8	47.6	5.9
Attended by Med. Exam.	53.5	70.6	94.4	97.9	88.2	92.4	100.0
Under DYFS Supervision	4.7	100.0	12.7	10.4	5.9	6.2	5.9
Number	1,457	68	142	48	17	145	17

homicides. Nonwhite deaths are 45 percent of the sudden and unknown category of deaths. Only 1 of the 17 suicides, however, was a nonwhite youth. Nonwhites are relatively underrepresented in motor vehicle deaths and slightly overrepresented in home accidents.

At all ages, the death rate for girls is less than that for boys. For the children who died in 1974 aged 8 days to 17 years, there were 858 boys who died (58.9 percent) and 599 girls (41.1 percent). Boys account for 69 percent of all accidental deaths; 77 percent of the suicides and 67 percent of the homicides are boys. Ten of the 17 deaths in which accident or homicide could not be determined are girls. The sex differences are more exaggerated in the adolescent years and in the violent death categories.

Following is a discussion of the latter five categories; an analysis of deaths of children under DYFS supervision will be provided separately in the next section of the report.

Home Accidents

Deaths from accidents which happened at home are about 10 percent of all deaths studied. As can be seen from Table 2, most of these deaths were for children in the preschool years. Eighty (80) of the 142 home accident

deaths were in the 1 to 5 years group. Many of these deaths are caused by fires in the home, about 36 percent. Drowning (18.3 percent) and falls (13.4 percent) are the other major categories of home accident deaths. In these deaths, the medical history and police investigation are crucial in supporting the medical examiner's determiation of cause of death. In one incident reported in an autopsy, two children who had apparently died in an explosion in the home were found to have been struck with a blunt instrument. The father was the suspected perpetrator who at first told of finding the children dead when he arrived after the explosion, but this history was inconsistent with the autopsy findings. Another medical history illustrates the difficulty in determining whether a home death is an accident or a homicide:

> This four-month old black baby was brought to the emergency room of _____ Medical Center on (date and time). The child was brought by the police and a friend, and he was bleeding from his right ear. At that time there was no definite history available. The story now available is that the child had been found a few minutes earlier, bleeding from the right ear, by the father who had called for help. The baby had been alone at home at the time with two other children, nine and eleven years old...A skull x-ray was taken which demonstrated a complex fracture of the right side with a huge hematoma...The father subsequently stated that he had come home and was playing with the baby. In doing so, he tossed him up in the air but was unable to catch him and the baby fell to the floor first striking the edge of the crib with his head and then falling to the floor which was carpeted. Immediately after this he said the baby seemed to be all right and was not bleeding, and he put him back into his crib. However, when he later went to check him, he found that he was bleeding, became alarmed, and called for help. (Medical Examiner's Report)

After a police investigation, the death was determined to be a homicide. The nature of the injuries in some child deaths allows the medical examiner to state that a death is nonaccidental, but alternative explanations or histories are usually possible (if not probable). A relatively high proportion of home accident deaths (12.7 percent) were under DYFS supervision at some time prior to the child's death and over one-quarter of the DYFS cases were recorded as home accident deaths - 18 of the 68 children.

One example of one DYFS-supervised child was a four year old girl who was left alone in the family apartment while the mother attended classes in the evening. The child apparently was pretending to cook and put a skillet filled with grease on the stove. The overheated skillet fell or was pulled by the child from the stove to the floor which ignited the floor. The child was found dead from gas and smoke inhalation in her room where she had apparently fled from the fire. The child was under supervision in the WIN day care program while the mother worked during the day from 8 a.m. to 5 p.m., but the mother depended on unreliable babysitting services from friends and neighbors when she went to school. The child was well cared for in other respects according to the reports of neighbors and of the DYFS caseworker. No criminal prosecution was pursued in this incident.

The typical DYFS supervised family in the sample has only one adult caretaker and the level of supervision required by preschool children is often beyond the resources, both financial and personal, of the parent. In the sample studied, children were too frequently left with grandmothers, friends, and neighbors who do not or cannot provide the level of care and attention necessary to insure the health and safety of the child. Two children died in the care of partially disabled grandparents. One child died in a fire while being cared for by his grandfather; the other child fell and struck a radiator with her head. The cost to society of insuring the health and safety of children would be very high because child care is a labor intensive activity and many children would have to be relocated to housing which does not threaten their lives as a fire and health hazard.

Homicides

A three-year-old boy was determined by an autopsy to have died in this manner: "Homicide by assault and scalding; second degree burns of the scrotum, perineum, lower extremities; dislocation of shoulder; multiple bruises of head and chest." A thirteen-month-old infant was found to have died from "Infanticide by assault; multiple bruises of body; traumatic suldural hematoma." Both parents in the latter case were convicted of

second degree murder. These are "classic" battered child cases (Kempe, et al, 1962). A thirteen-year-old girl and ten-year-old brother were alledgedly shot by their father in another incident of child abuse. Two sisters aged seventeen (17) months and four and one-half (4 1/2) years died of a blunt force instrument injury of the head. The father was the alleged perpetrator.

Child abuse murders were most frequent among children under fifteen (15) years of age. As noted earlier, homicides in the older groups (15 to 17) were more likely to occur outside the home and the perpetrators were rarely the caretakers of the child.

Two-thirds of the homicide victims were boys. The sex distribution is more balanced in the younger groups, but there are still more boys than girls in all of these groups. Nonwhite children are represented in a proportion much greater than they are in the population (43.8 percent of all homicides). Five (5) of the homicides were recorded for children who had been under DYFS supervision. One or both parents were involved in four (4) of these homicides; the other victim, a sixteen-year-old boy, was allegedly stabbed by his girlfriend.

Sudden and Unknown Causes

Sudden and unexpected deaths without detectable trauma are a major killer of infants. About ten (10) percent of the deaths studied were in this classification. Most of the 145 deaths were for infants (88.3 percent). In a review of research on the sudden infant death syndrome, Beckwith (1975) rejects child abuse as a cause of SIDS deaths. Child abuse or infanticide is "(c)ertainly the most malignant theory ever proposed. Inconsistent with narrow pathologic spectrum, viral isolation rates, etc." (Beckwith, 1975:20) Many theories of causation have been proposed (Beckwith reviews about 75 theories) yet there is little that is known for certain. These deaths are the focus of a major research effort and the preponderance of evidence is toward "natural" causes rather than child abuse or neglect.

The sex distribution is about the same as for all deaths 58.6 percent boys and 41.6 percent girls as shown in Table 2. Nearly half of the children were nonwhite (47.6 percent); they are again much overrepresented and suggestive of social factors in these deaths. Nine (9) of the children under DYFS supervision were in this group.

Suicides

Suicides claimed the lives of seventeen (17) members of the population studied. All of the victims were over eleven (11) years of age. Three-quarters (76.5 percent) were male, although Hankoff (1975) and Jacobziner (1965) claim that girls attempt and fail suicides more frequently than boys. Nearly all are white (94.1 percent). This is a fairly stable finding and it has been suggested that some black homicides may be victim precipitated. Only one (1) of the DYFS-supervised children, a thirteen-year-old boy, was a suicide. Since none of the other suicides was reported to the DYFS, there may be a need to examine whether protective services may be indicated for attempted suicides and for the siblings of suicide victims. Family problems are the most frequent precipitating events in juvenile suicides and attempted suicides (Hankoff, 1975).

A Note on Pneumonia

Pneumonia is recorded as the cause of death in 101 of the 1,457 cases studied. Two of the DYFS-supervised cases were in this cause group. Dr. Michael Lyons, a New Jersey pathologist who has studied child abuse deaths, notes in an unpublished paper that the only pathological evidence of medical neglect is often pneumonia. Such deaths may be the result of an extended period of poor care. This study is unable to document

substantially that pneumonia is the result of neglect in the cases studied, but there were hints of neglect in a few cases. Medical neglect is quite common in our health system because some parents are discouraged by the second-rate medical care they receive. One of the DYFS cases, an infant boy, died of acute bronchial pneumonia the day after he was discharged from the hospital. The other DYFS-supervised child who died of pneumonia, a two-year-old girl, was referred by a hospital because the "child has serious medical problems, (the mother) seems limited (and) unable to cope with care." Two cases are not evidence of a clear trend, but do suggest that neglect by parents and by health professionals is a factor in some pneumonia deaths.

IV. Children Under DYFS Supervision

Matching Procedure

The first step toward identifying the children who were under DYFS supervision at the time of or prior to their deaths was to obtain listings of death certificate data from the New Jersey Department of Health. The information in this file includes the child's name, age (not date of birth) at death, sex, race and residence. These items correspond to items in the child master record file of DYFS. There are 1,457 death records for children aged 8 days to 17 years; the DYFS listing of

children under supervision from 1967 to 1976 includes about 150,000 names. The DYFS data set was created from dozens of child master record tapes for the purpose of developing a more comprehensive child abuse and neglect registry; the cost of generating the data set would not have been justified for this study alone. We have both listings of items and machine readable data for the two data sets.

Student assistants were instructed to read each name in the death records and to search for that name in the DYFS listings. Slight variants were to be considered tentative matches because of apparent spelling errors in the DYFS listing. The age item on the death record was then compared with the date of birth item on the DYFS listing. One problem encountered was that any given age could match with two years on date of birth item, e.g., six years old could be matched with either 1967 or 1968. At the end of this stage there were 112 potential matches. A few of these were simply multiple entries on the DYFS listing because the child was under supervision more than once; there were 109 different children's names that were considered matches on the basis of name and age.

The 109 names were reduced to 68 reliable matches, and 41 which are false matches. A reliable match is one

that matched on all items that were available (name, age, sex, race, county of residence, municipality, and which had a date of death consistent with DYFS listing dates). A false match is one with more than one inconsistency or one in which the dates on the DYFS listing indicate that the child was living after the date of death. A limited amount of quality control was done to insure that the matching process did not miss a significant number of children. The distribution of county of residence of the matched children was compared with a random sample from the DYFS listing and no significant departures were detected.

Home accident deaths, homicides, and deaths where the possibility of homicide was not ruled out were searched for a second time. All cases on the DYFS listing with termination code equal D, child died, were examined and a listing of all child deaths known to the central registry* was used to find any possible child who was supervised by DYFS and who died in 1974. We are confident that the matching procedure captured nearly all of the possible matches and that there was no systematic bias in the selection of cases.

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*Several children were reported to the central registry at the time of death and were never under DYFS supervision.

Findings from Matched Children

The two sources of data allowed only a limited number of comparisons. Nonetheless, some interesting differences emerged from the analysis. The most significant finding is that 26.4 percent (18 of 68) of all deaths to DYFS-supervised children were caused by home accidents. This compared with 9.7 percent (142 of 1,457) for the population of all child deaths aged 8 days to under 17 years. The difference is 17 percentage points. About 70 percent of all DYFS accidental deaths (18 to 26) occurred at home; only 31.4 percent of all child accidental deaths (142 or 451) occurred at home. On the basis of these differences, home accidents is a class of deaths in which an investigation to determine possible child abuse or neglect should be required.

Table 2 shows a comparison between the causes of death for all children in the study and DYFS-supervised children. Overall, these are not great differences, considering the small number of DYFS cases, but certain patterns are apparent. Fifteen percent fewer deaths in the DYFS population were recorded as caused by natural diseases and conditions and the proportion of homicides in the DYFS population is more than twice that of all deaths.

DYFS cases are drawn disproportionately from households which are poor, single parent and nonwhite. These attributes are all related to mortality risks as well as the likelihood of being under DYFS supervision. We do not have data on income or household composition, but we would expect that such variables would account for a substantial part of the differences between the DYFS cases and all cases. Table 2 shows that a higher proportion of the DYFS child deaths were nonwhite (44.1 percent versus 29.3 percent) than the population of all child deaths. This proportion reflects the composition of the aggregate DYFS caseload, in which approximately 43 percent of all cases actively supervised are nonwhite.

There are no remarkable differences between the sex frequencies of the two populations. Both show more boys than girls died; about 4 percent more boys (62.7 versus 58.9) died in the DYFS-supervised cases. The age distribution percent (Table 2) does show some differences. Almost 13 percent more deaths under 1 year occurred in the total population than in DYFS cases. Infants are less likely to get on the caseload of DYFS. The 1 to 5 year old group is about 13 percentage points different in the opposite direction. The remainder of the age distribution for the DYFS cases is quite similar to the population distribution.

Twenty-six (26) children were reported after they died to the DYFS central registry of child abuse and neglect, but were never under DYFS supervision. Siblings of many of these children were subsequently placed under supervision. In one other case, reference was made to the child being under DYFS supervision, but neither the caseload listing nor the central registry record the child.

Some other characteristics of the DYFS-supervised children are:

- Sixty-three (63) percent were on the caseload at the time of death.
- The year in which the child was placed under supervision was 1974 in 31.8 percent of the cases, 28.8 percent for 1973, 9.1 percent for 1972, 6.1 percent for 1971, 10.6 percent for 1970, 4.5 percent for 1969, 3.0 percent for 1968, and 6.1 percent missing date.
- About two-thirds of the children were living with one or more parents at the last entry of information.
- Thirty (30) percent of the children were under protective services supervision and seven (7) children (10 percent) were under supervision for child abuse, disposition code A06.

V. Summary and Recommendations

One-half of the DYFS-supervised children who died in 1974 died of the following causes of death: home accident, homicide, undetermined homicide or accident, sudden or unknown, and suicide. These causes of death account for only 18.5 percent of all deaths in the age group selected for analysis in New Jersey. Part of this difference is attributable to the underrepresentation of infants in the DYFS group, but this difference also reflects the conditions of life for many children in New Jersey. We suspect that proverty, poor child care, unsafe housing, and poor medical care contribute to this statistical difference.

Three areas of concern have repeatedly come out in the research done for this report. The first is the level of pre and postnatal care received by some segments of the New Jersey population as indicated by the high infant mortality rates in the poorer urban areas. Preventive measures will save more lives than any intervention after conditions develop.

The second concern is the high proportion of children aged 1 to 5 years who died in home accidents. Further study of this problem is needed to determine whether the DYFS needs to develop a more aggressive program of intervention in cases of nonfatal home accidents. The

third area of concern emerges from the reading of case material, rather than the statistical data.

Medical neglect and leaving children unattended are two very dangerous types of child neglect in terms of the potential for serious harm to the child. The children of a poor parent who has limited access to quality medical care and the single parent who faces a difficult tasks in caring for the preschool child care are especially at risk to these types of neglect. Reform in the health care system and medical advocacy by the DYFS seem to be needed. Some type of on-call "babysitting" service may need to be developed which could supplement day care and homemaker services. Many people in this state cannot afford to hire reliable, temporary caretakers for their children.

Homicides, suicides, and motor vehicle accidents are causes of death for many teenage boys and girls. In some of the case materials, there is a pattern of what might be called a death wish. One teenager girl jumped in front of an automobile, a teenage boy "played chicken" with a train, another teenage boy who was stabbed to death by his girlfriend, was involved in several violent incidents as victim and perpetrator, and others exposed themselves to dangerous conditions and environments. We can only speculate on the extent to which the level

of caring experienced by these children contributed to their early deaths.

We are frustrated by the limits of our data to pursue any case in great depth. The broad patterns and statistical picture presented here shows the need for some definite programmatic measures in New Jersey. They do not adequately reflect the tragic phenomenon of child death which is reported in case records and autopsy reports.

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